

Grizzly

Industrial, Inc.®

MODEL H8203 PROFESSIONAL DRILL SHARPENING MACHINE OWNER'S MANUAL



COPYRIGHT © NOVEMBER, 2007 BY GRIZZLY INDUSTRIAL, INC.
**WARNING: NO PORTION OF THIS MANUAL MAY BE REPRODUCED IN ANY SHAPE
OR FORM WITHOUT THE WRITTEN APPROVAL OF GRIZZLY INDUSTRIAL, INC.**

#BL10076 PRINTED IN TAIWAN

 **WARNING!**

This manual provides critical safety instructions on the proper setup, operation, maintenance and service of this machine/equipment.

Failure to read, understand and follow the instructions given in this manual may result in serious personal injury, including amputation, electrocution or death.

The owner of this machine/equipment is solely responsible for its safe use. This responsibility includes but is not limited to proper installation in a safe environment, personnel training and usage authorization, proper inspection and maintenance, manual availability and comprehension, application of safety devices, blade/cutter integrity, and the usage of personal protective equipment.

The manufacturer will not be held liable for injury or property damage from negligence, improper training, machine modifications or misuse.

 **WARNING!**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- **Lead from lead-based paints.**
- **Crystalline silica from bricks, cement and other masonry products.**
- **Arsenic and chromium from chemically-treated lumber.**

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: Work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

Table of Contents

INTRODUCTION.....	2
Foreword	2
Contact Info.....	2
Machine Data Sheet.....	3
Identification	5
Drill Bit Anatomy.....	6
SECTION 1: SAFETY	7
Safety Instructions for Machinery.....	7
Additional Safety for Drill Sharpening Machines.....	9
SECTION 2: CIRCUIT REQUIREMENTS	10
110V Operation	10
SECTION 3: SETUP	11
Setup Safety.....	11
Unpacking	11
Inventory.....	11
Site Considerations	12
Test Run.....	12
SECTION 4: OPERATIONS	13
Operation Safety	13
Overview	13
Basic Controls	13
Calibrating Drill Bit.....	14
Setting Point Angle.....	16
Front Grinding Area.....	16
Rear Trimming Area.....	17
SECTION 5: MAINTENANCE	19
Schedule	19
Drill Sharpening Accessories	19
Cleaning	19
Changing Grinding Wheel	19
SECTION 6: SERVICE	21
Troubleshooting.....	21
Wiring Diagram	23
Parts Breakdown.....	24
Parts List	25
WARRANTY AND RETURNS	29

INTRODUCTION

Foreword

We are proud to offer the Model H8203 Professional Drill Sharpening Machine. This machine is part of a growing Grizzly family of fine metalworking machinery. When used according to the guidelines set forth in this manual, you can expect years of trouble-free, enjoyable operation and proof of Grizzly's commitment to customer satisfaction.

The specifications, drawings, and photographs illustrated in this manual represent the Model H8203 when the manual was prepared. However, owing to Grizzly's policy of continuous improvement, changes may be made at any time with no obligation on the part of Grizzly.

For your convenience, we always keep current Grizzly manuals available on our website at **www.grizzly.com**. Any updates to your machine will be reflected in these manuals as soon as they are complete. Visit our site often to check for the latest updates to this manual!

Contact Info

If you have any comments regarding this manual, please write to us at the address below:

Grizzly Industrial, Inc.
c/o Technical Documentation Manager
P.O. Box 2069
Bellingham, WA 98227-2069
Email: manuals@grizzly.com

We stand behind our machines. If you have any service questions or parts requests, please call or write us at the location listed below.

Grizzly Industrial, Inc.
1203 Lycoming Mall Circle
Muncy, PA 17756
Phone: (570) 546-9663
Fax: (800) 438-5901
E-Mail: techsupport@grizzly.com
Web Site: <http://www.grizzly.com>





MACHINE DATA SHEET

Customer Service #: (570) 546-9663 • To Order Call: (800) 523-4777 • Fax #: (800) 438-5901

MODEL H8203 PROFESSIONAL DRILL SHARPENING MACHINE

Product Dimensions:

Weight 18 lbs.
 Length/Width/Height 11½" x 8" x 7"
 Foot Print (Length/Width).....11¼" x 4¾"

Shipping Dimensions:

Type Cardboard
 Content..... Machine
 Weight 20 lbs.
 Length/Width/Height..... 15 " x 12" x 8"

Electrical:

Switch..... ON/OFF Toggle
 Switch Voltage 110V
 Cord Length 5 ft.
 Cord Gauge 16 gauge
 Recommended Circuit Size 15A
 Plug..... Yes

Motor:

Type..... Brushless DC
 Horsepower ¼ HP
 Voltage 110V
 Phase Single
 Amps 3A
 Speed 6000 RPM
 Cycle..... 60 Hz
 Number Of Speeds..... 1

Main Specifications:

Construction

Body Construction Steel
 Paint Powder Coated

Operation Information

Allowable Drill Bit Size 1/8"-1/2" (3-13mm)
 Minimum Drill Bit Length 1½"
 Bit Angle 90°-140°
 Number of Collets..... 11
 Collet Sizes 1/8" (2-3mm), 5/32" (3.1-4mm), 3/16" (4.1-5mm), 1/4" (5.1-6mm), 9/32" (6.1-7mm), 5/16" (7.1-8mm), 3/8" (8.1-9mm), 25/64" (9.1-10mm), 7/16" (10.1-11mm), 15/32" (11.1-12mm), 1/2" (12.1-13mm)
 Grinding Wheel Size..... 65°, 78 x 10 x 12.7mm
 Grinding Wheel Grit..... 170
 Grinding Wheel Type..... CBN 170 Material



Other Specifications:

Country Of Origin Taiwan
Warranty..... 1 Year
Serial Number Location ID Label on Machine

Features:

- Tapered CBN (Cubic Boron Nitride) Grinding Wheel
- Sharpens 1/8"-1/2" (3-13mm) Twist Drill Bits
- Included CBN 170 Grinding Wheel Sharpens HSS, TiN-Coated, and Cobalt Bits
- Optional SDC 170 Grinding Wheel Sharpens Carbide Bits
- Included Cleaning Knob Brush
- Easy Three-Step Sharpening Process



Identification

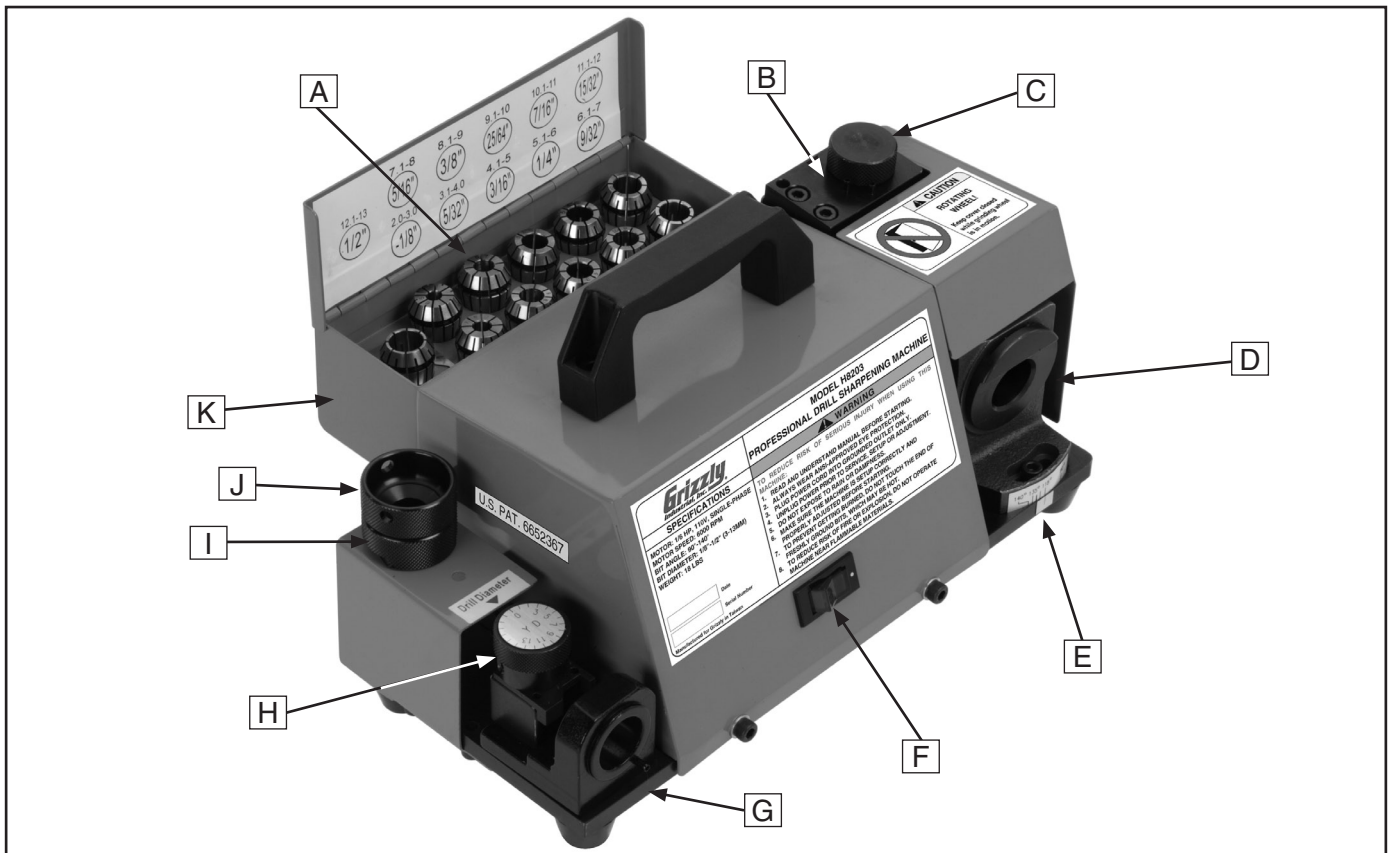


Figure 1. Model H8203 identification.

- A. Collet
- B. Rear Trimming Area
- C. Cleaning Brush
- D. Front Grinding Area
- E. Point Angle Adjusting Scale
- F. ON/OFF Switch
- G. Calibrating Device
- H. Calibrating Dial
- I. Lock Ring
- J. Collet Holder
- K. Collet Tray



Drill Bit Anatomy

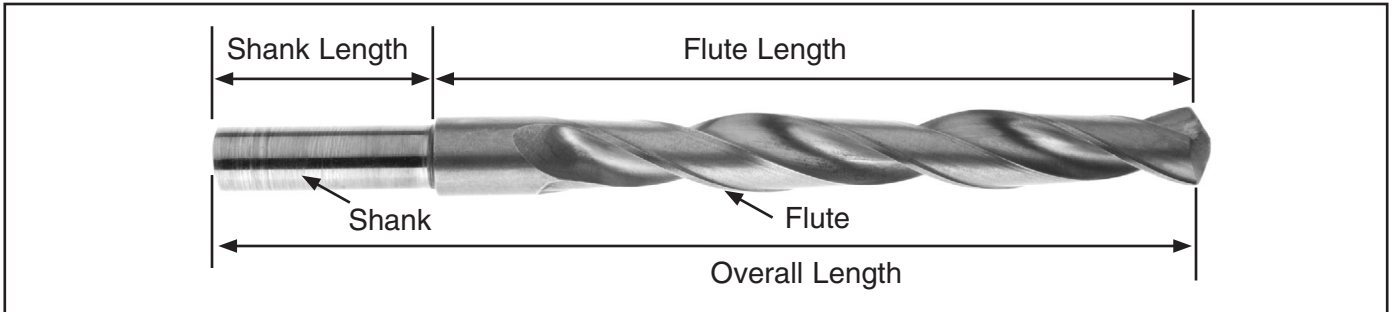


Figure 2. Side view of drill bit parts.

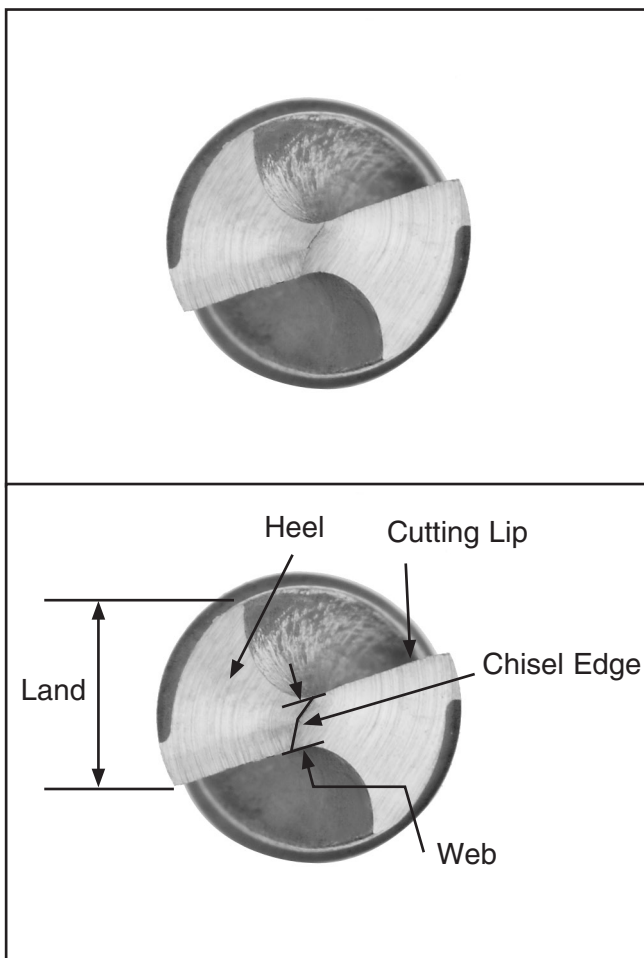


Figure 3. Top view of standard drill bit parts.

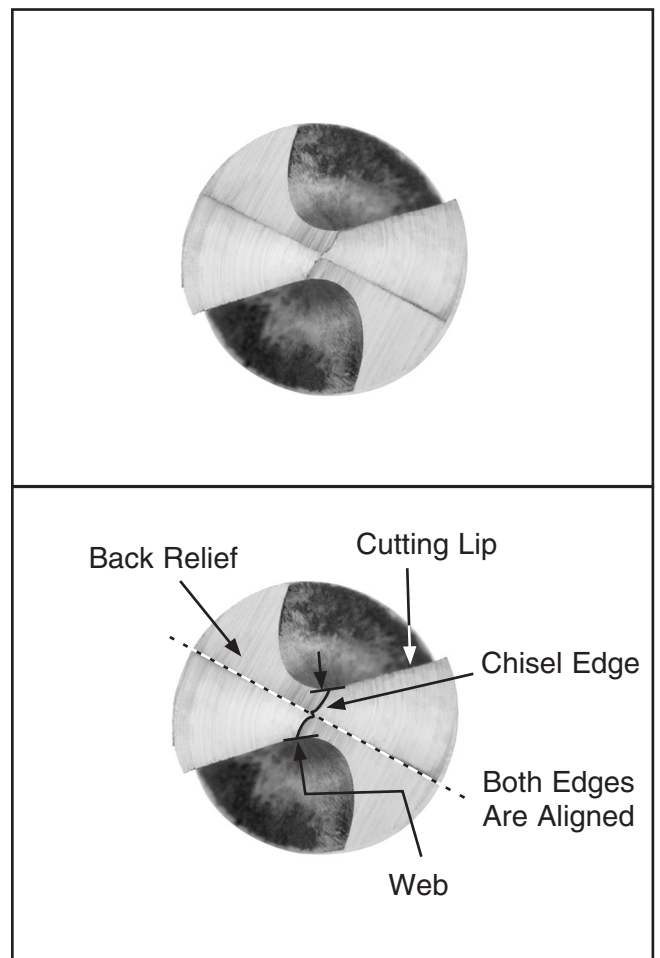


Figure 4. Top view of split point drill bit parts.



SECTION 1: SAFETY

WARNING

For Your Own Safety, Read Instruction Manual Before Operating this Machine

The purpose of safety symbols is to attract your attention to possible hazardous conditions. This manual uses a series of symbols and signal words intended to convey the level of importance of the safety messages. The progression of symbols is described below. Remember that safety messages by themselves do not eliminate danger and are not a substitute for proper accident prevention measures.



Indicates an imminently hazardous situation which, if not avoided, **WILL** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **COULD** result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, **MAY** result in minor or moderate injury. It may also be used to alert against unsafe practices.

NOTICE

This symbol is used to alert the user to useful information about proper operation of the machine.

WARNING

Safety Instructions for Machinery

- 1. READ THE ENTIRE MANUAL BEFORE STARTING MACHINERY.** Machinery presents serious injury hazards to untrained users.
- 2. ALWAYS USE ANSI APPROVED SAFETY GLASSES WHEN OPERATING MACHINERY.** Everyday eyeglasses only have impact resistant lenses—they are NOT safety glasses.
- 3. ALWAYS WEAR A NIOSH APPROVED RESPIRATOR WHEN OPERATING MACHINERY THAT PRODUCES DUST.** Most types of dust (wood, metal, etc.) can cause severe respiratory illnesses.
- 4. ALWAYS USE HEARING PROTECTION WHEN OPERATING MACHINERY.** Machinery noise can cause permanent hearing loss.
- 5. WEAR PROPER APPAREL. DO NOT** wear loose clothing, gloves, neckties, rings, or jewelry that can catch in moving parts. Wear protective hair covering to contain long hair and wear non-slip footwear.
- 6. NEVER OPERATE MACHINERY WHEN TIRED OR UNDER THE INFLUENCE OF DRUGS OR ALCOHOL.** Be mentally alert at all times when running machinery.



WARNING

Safety Instructions for Machinery

7. **ONLY ALLOW TRAINED AND PROPERLY SUPERVISED PERSONNEL TO OPERATE MACHINERY.** Make sure operation instructions are safe and clearly understood.
8. **KEEP CHILDREN AND VISITORS AWAY.** Keep all children and visitors a safe distance from the work area.
9. **MAKE WORKSHOP CHILDPROOF.** Use padlocks, master switches, and remove start switch keys.
10. **NEVER LEAVE WHEN MACHINE IS RUNNING.** Turn power **OFF** and allow all moving parts to come to a complete stop before leaving machine unattended.
11. **DO NOT USE IN DANGEROUS ENVIRONMENTS.** DO NOT use machinery in damp, wet locations, or where any flammable or noxious fumes may exist.
12. **KEEP WORK AREA CLEAN AND WELL LIGHTED.** Clutter and dark shadows may cause accidents.
13. **USE A GROUNDED EXTENSION CORD RATED FOR THE MACHINE AMPERAGE.** Grounded cords minimize shock hazards. Undersized cords create excessive heat. Always replace damaged extension cords.
14. **ALWAYS DISCONNECT FROM POWER SOURCE BEFORE SERVICING MACHINERY.** Make sure switch is in OFF position before reconnecting.
15. **MAINTAIN MACHINERY WITH CARE.** Keep blades sharp and clean for best and safest performance. Follow instructions for lubricating and changing accessories.
16. **MAKE SURE GUARDS ARE IN PLACE AND WORK CORRECTLY BEFORE USING MACHINERY.**
17. **REMOVE ADJUSTING KEYS AND WRENCHES.** Make a habit of checking for keys and adjusting wrenches before turning machinery **ON**.
18. **CHECK FOR DAMAGED PARTS BEFORE USING MACHINERY.** Check for binding or misaligned parts, broken parts, loose bolts, and any other conditions that may impair machine operation. Repair or replace damaged parts before operation.
19. **USE RECOMMENDED ACCESSORIES.** Refer to the instruction manual for recommended accessories. Improper accessories increase risk of injury.
20. **DO NOT FORCE MACHINERY.** Work at the speed for which the machine or accessory was designed.
21. **SECURE WORKPIECE.** Use clamps or a vise to hold the workpiece when practical. A secured workpiece protects your hands and frees both hands to operate the machine.
22. **DO NOT OVERREACH.** Maintain stability and balance at all times.
23. **MANY MACHINES CAN EJECT WORKPIECES TOWARD OPERATOR.** Know and avoid conditions that cause the workpiece to "kickback."
24. **ALWAYS LOCK MOBILE BASES (IF USED) BEFORE OPERATING MACHINERY.**
25. **CERTAIN DUST MAY BE HAZARDOUS** to the respiratory systems of people and animals, especially fine dust. Be aware of the type of dust you are exposed to and always wear a respirator designed to filter that type of dust.



WARNING

Additional Safety for Drill Sharpening Machines

- 1. BURN HAZARD.** To prevent getting burned, do not touch the end of freshly ground bits, which may be hot.
- 2. GRINDING WHEEL CONTACT.** Avoid inserting fingers into grinding areas when machine is turned **ON**.
- 3. ACCESSORIES.** Avoid using accessories or attachments not specifically designed for this machine.
- 4. EXPERIENCING DIFFICULTIES.** If at any time you are experiencing difficulties performing the intended operation, stop using the machine! Contact Tech Support at (570) 546-9663.

WARNING

Like all machinery there is potential danger when operating this machine. Accidents are frequently caused by lack of familiarity or failure to pay attention. Use this machine with respect and caution to lessen the possibility of operator injury. If normal safety precautions are overlooked or ignored, serious personal injury may occur.

CAUTION

No list of safety guidelines can be complete. Every shop environment is different. Always consider safety first, as it applies to your individual working conditions. Use this and other machinery with caution and respect. Failure to do so could result in serious personal injury, damage to equipment, or poor work results.

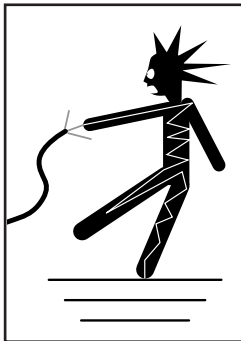


SECTION 2: CIRCUIT REQUIREMENTS

110V Operation

!WARNING

Serious personal injury could occur if you connect the machine to power before completing the setup process. **DO NOT** connect the machine to the power until instructed later in this manual.



!WARNING

Electrocution or fire could result if machine is not grounded and installed in compliance with electrical codes. Compliance **MUST** be verified by a qualified electrician!

Full Load Amperage Draw

Motor Draw3 Amps

Minimum Circuit Requirements

You **MUST** connect your machine to a grounded circuit that is rated for the amperage given below. Never replace a circuit breaker on an existing circuit with one of higher amperage without consulting a qualified electrician to ensure compliance with wiring codes. **If you are unsure about the wiring codes in your area or you plan to connect your machine to a shared circuit, consult a qualified electrician.**

Minimum Circuit Size..... 15 Amps

Power Connection Device

The Model H8203 comes with a 5-15 plug, similar to **Figure 5**, to connect the machine to power.

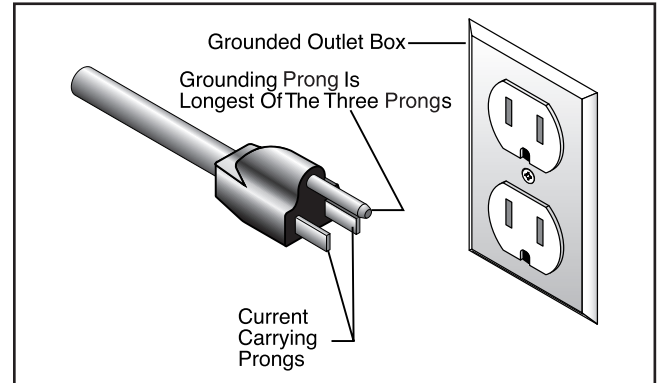
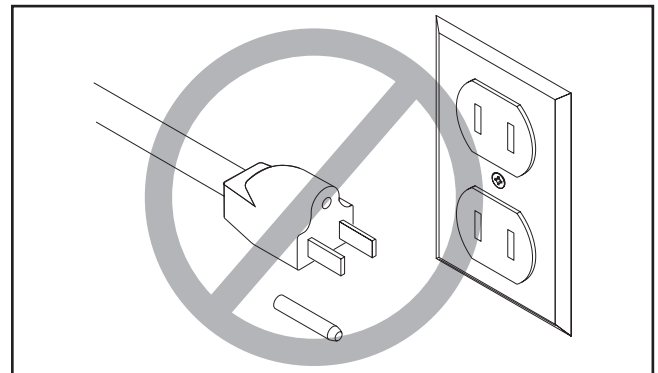


Figure 5. Typical 5-15 plug and receptacle.



!CAUTION

This machine **MUST have a ground prong in the plug to help ensure that it is grounded. **DO NOT** remove ground prong from plug to fit into a two-pronged outlet! If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician.**

Extension Cords

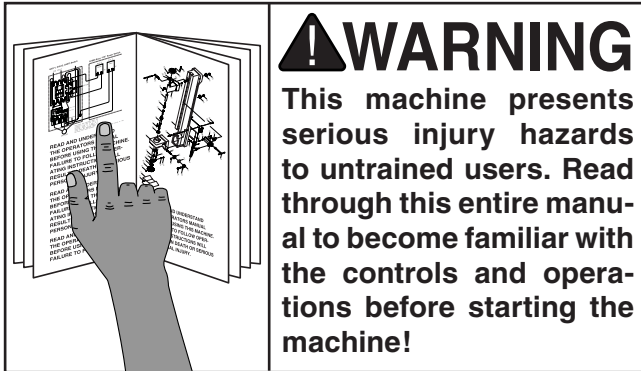
We do not recommend using extension cords, but if you find it absolutely necessary:

- Use at least a 16 gauge cord that does not exceed 50 feet in length!
- The extension cord must have a ground wire and plug pin.
- A qualified electrician **MUST** size cords over 50 feet long to prevent motor damage.



SECTION 3: SETUP

Setup Safety



Unpacking

Your machine was carefully packaged for safe transportation. Remove the packaging materials from around your machine and inspect it. If you discover the machine is damaged, *please immediately call Customer Service at (570) 546-9663 for advice.*

Save the containers and all packing materials for possible inspection by the carrier or its agent. *Otherwise, filing a freight claim can be difficult.*

When you are completely satisfied with the condition of your shipment, inventory the contents.

Inventory

The following is a description of the main components shipped with your machine. Lay the components out to inventory them.

Note: *If you can't find an item on this list, check the mounting location on the machine or examine the packaging materials carefully. Occasionally we pre-install certain components for shipping purposes.*

Box 1: (Figure 6)	Qty
A. Collets	11
— 2.0-3.0mm ($\frac{1}{8}$ ") Collet	1
— 3.1-4.0mm ($\frac{5}{32}$ ") Collet	1
— 4.1-5mm ($\frac{3}{16}$ ") Collet	1
— 5.1-6mm ($\frac{1}{4}$ ") Collet	1
— 6.1-7mm ($\frac{9}{32}$ ") Collet.....	1
— 7.1-8mm ($\frac{5}{16}$ ") Collet.....	1
— 8.1-9mm ($\frac{3}{8}$ ") Collet	1
— 9.1-10mm ($\frac{25}{64}$ ") Collet.....	1
— 10.1-11mm ($\frac{7}{16}$ ") Collet.....	1
— 11.1-12mm ($\frac{15}{32}$ ") Collet	1
— 12.1-13mm ($\frac{1}{2}$ ") Collet	1
B. Collet Holder.....	1
C. Hex Wrench 4mm.....	1
D. Lock Ring	1

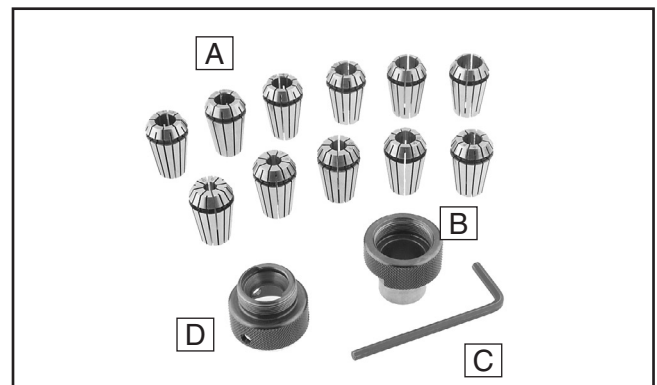


Figure 6. H8203 inventory.

If any nonproprietary parts are missing (e.g. a nut or a washer), we will gladly replace them; or for the sake of expediency, replacements can be obtained at your local hardware store.



Site Considerations

Placement Location

Consider existing and anticipated needs, size of material to be processed through each machine, and space for auxiliary stands, work tables or other machinery when establishing a location for your new machine. See **Figure 7** for the minimum working clearances.

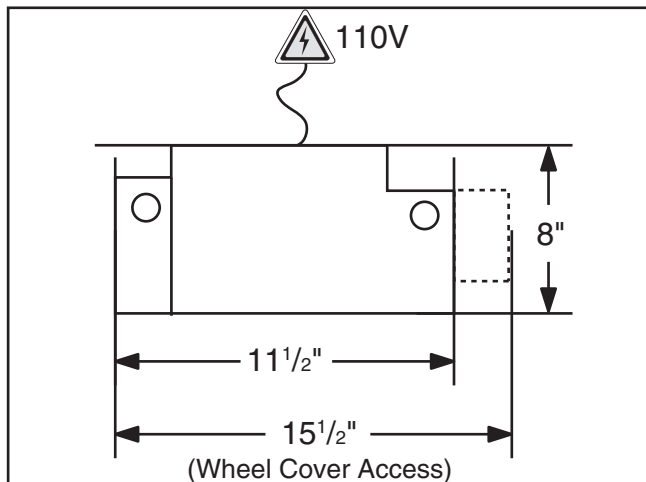
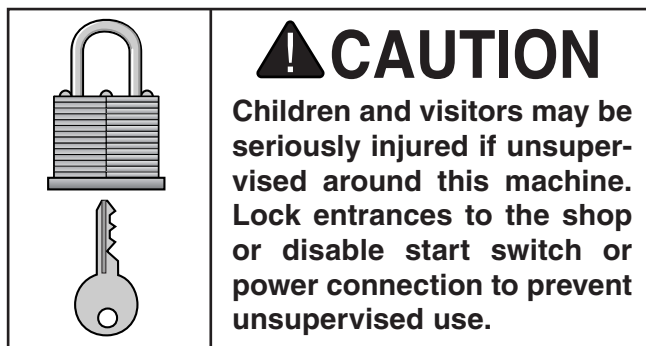


Figure 7. Minimum working clearances.



Test Run

Test run your machine to make sure it runs properly.

If, during the test run, you cannot easily locate the source of an unusual noise or vibration, stop using the machine immediately, then review the **Troubleshooting** on **Page 21**.

If you still cannot remedy a problem, contact our Tech Support at (570) 546-9663 for assistance.

To test run the machine:

1. Make sure you have read the safety instructions at the beginning of the manual and that the machine is setup properly.
2. Make sure all tools and objects used during set up are cleared away from the machine.
3. Connect the machine to the power source.
4. Turn the machine **ON**.
5. Listen to and watch for abnormal noises or actions. The machine should run smoothly with little or no vibration or rubbing noises.

—Strange or unusual noises should be investigated and corrected before operating the machine further. Always disconnect the machine from power when investigating or correcting potential problems.
6. Turn the machine **OFF**.

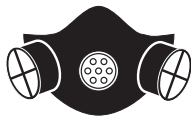


SECTION 4: OPERATIONS

Operation Safety

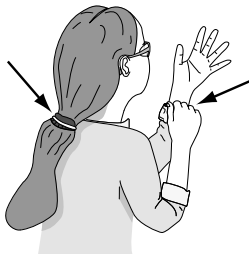
! WARNING

Damage to your eyes and lungs could result from using this machine without proper protective gear. Always wear safety glasses and a respirator when operating this machine.



! WARNING

Loose hair and clothing could get caught in machinery and cause serious personal injury. Keep loose clothing and long hair away from moving machinery.



NOTICE

If you have never used this type of machine or equipment before, WE STRONGLY RECOMMEND that you read books, trade magazines, or get formal training before beginning any projects. Regardless of the content in this section, Grizzly Industrial will not be held liable for accidents caused by lack of training.

Overview

The Model H8203 features a tapered CBN (cubic boron nitride) grinding wheel that sharpens twist drill bits using a three-step process. The included CBN grinding wheel sharpens HSS, TiN-coated, and cobalt bits. An optional SDC 170 grinding wheel (Page 19) sharpens carbide bits.

Basic Controls

Below is a list of the basic controls on the Model H8203. Use the list with Figure 8 to become familiar with your drill sharpening machine.

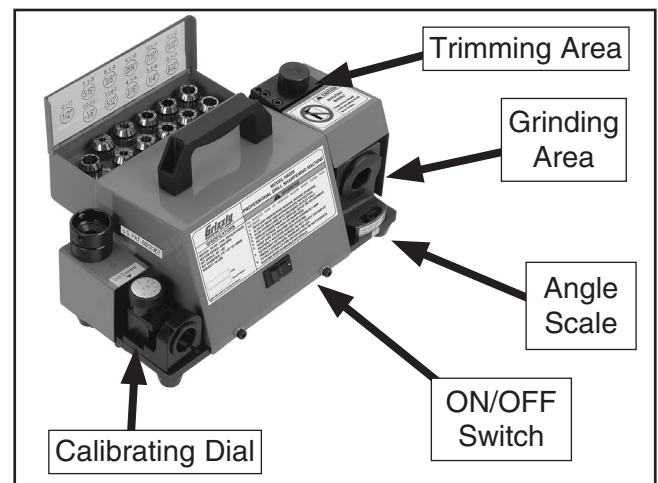


Figure 8. H8203 controls.

Calibrating Dial: Matches drill bit with correctly sized collet. Ensures drill bit is correctly positioned in the collet holder.

Trimming Area: Location where grinding wheel thins the drill bit web.



Angle Scale: Indicates the point angle to be sharpened; the angle can be adjusted from 90°—140° depending upon the workpiece material to be drilled.

Grinding Area: Location where the CBN wheel grinds the drill bit point angle to the selected angle.

ON/OFF Switch: Turns the machine **ON** or **OFF**.

Calibrating Drill Bit

The following steps must be done to prepare the drill bit to be sharpened.

To calibrate the drill bit:

1. Use the chart below or the one on the collet tray cover to select the appropriate collet for your drill.

Metric Size	Fractional-Inch Size	Collet No.
2.0-3.0	Less than 1/8"	3 2
3.1-4.0	1/8"-5/32"	4 3
4.1-5	11/64"-3/16"	5 4
5.1-6	13/64"-1/4"	6 5
6.1-7	17/64"-9/32"	7 6
7.1-8	19/64"-5/16"	8 7
8.1-9	21/64"-23/64"	9 8
9.1-10	3/8"-25/64"	10 9
10.1-11	13/32"-7/16"	11 10
11.1-12	29/64"-15/32"	12 11
12.1-13	31/64"-1/2"	13 12

2. Insert the collet at a slight angle into the lock ring, as shown in **Figure 9**.

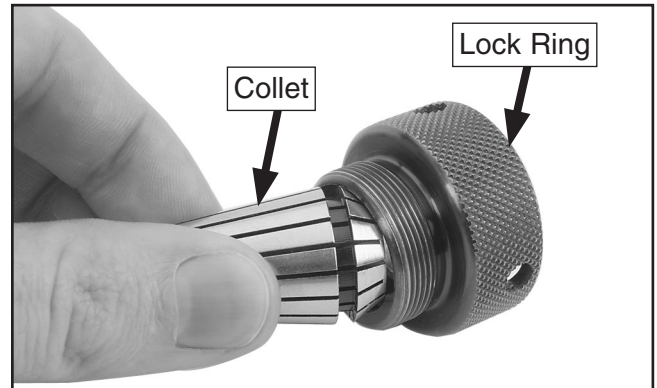


Figure 9. Inserting collet into lock ring.

3. Thread the collet holder onto the lock ring two turns for now, and insert the drill bit into the collet holder as shown in **Figure 10**.

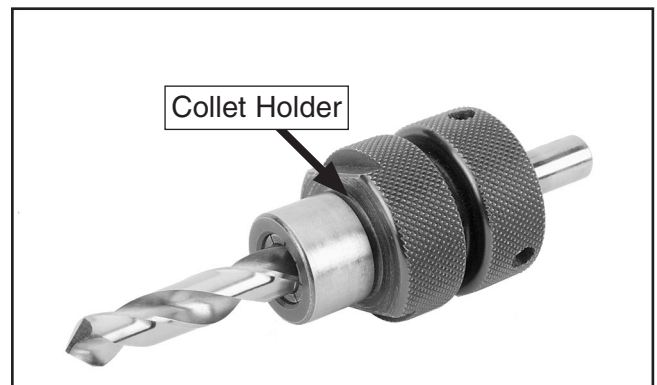


Figure 10. Drill bit installed in collet holder.

4. Turn the calibrating dial right until it stops at the "0" position, then align the arrow on the calibrating device with the number on the dial that corresponds to the drill bit diameter.

For example, turn the dial to "7" for a 7mm diameter drill bit, as shown in **Figure 11**.



Figure 11. Calibrating dial set for a 7mm drill bit.



—If you are using a standard drill bit, find the closest metric size. For example, turn the dial to "8" for a $\frac{3}{8}$ " drill bit.

—If you are sharpening aircraft extension or deep hole drill bits, select a number on the dial that is double the drill bit diameter. For example, set the calibration dial to "10" for a 5mm aircraft extension drill bit.

5. Fully insert the collet holder with the drill bit into the calibrating device, so the holder and device are flush and the pin fits into the collet holder notch as shown in **Figure 12**.

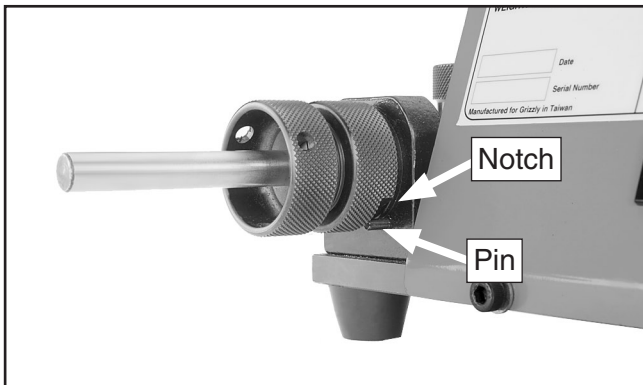


Figure 12. Collet holder notch aligned with adjusting device pin.

6. Turn the collet holder clockwise until it stops, push the bit forward as far as it will go into the calibrating device, then turn the bit clockwise until it stops, as shown in **Figure 13 & 14**.

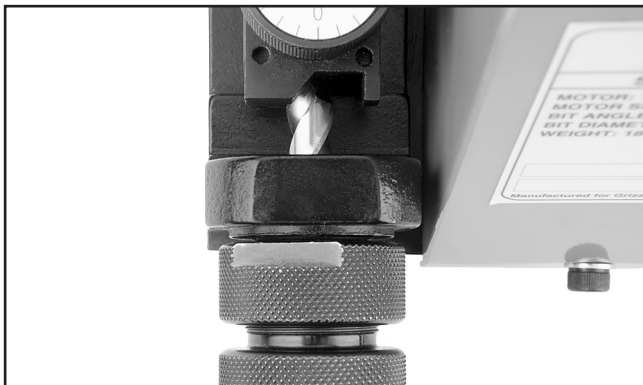


Figure 13. Drill bit positioned in calibrating device, top view.

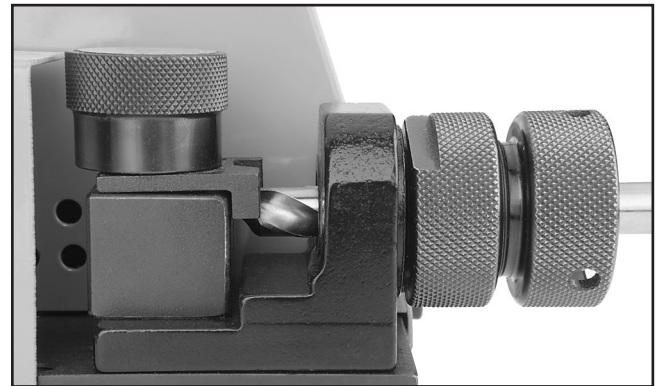


Figure 14. Drill bit positioned in calibrating device, side view.

7. Thread the locking ring fully onto the collet holder, then remove the collet holder and drill bit from the machine.

8. Tug on the bit to verify that it is locked in the collet.

—If the bit moves, use a smaller collet size and repeat **Steps 1-8**.

9. The drill bit is properly calibrated when the notch on the collet holder and the drill bit cutting lip are parallel, as shown in **Figure 15**.

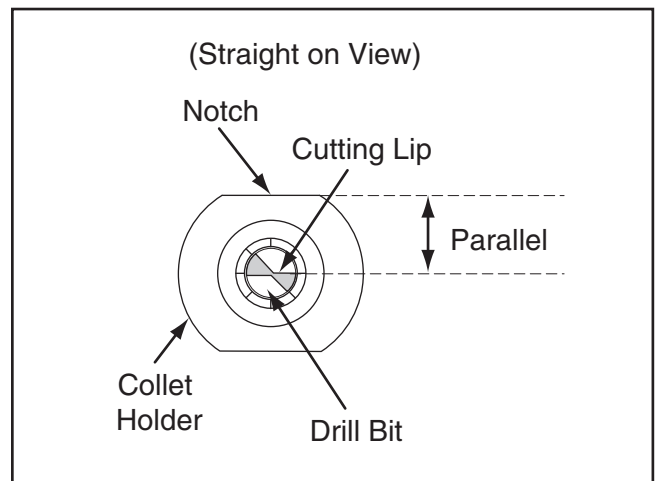


Figure 15. Cutting edge parallel to collet holder notch.



Setting Point Angle

The Model H8203 allows you to select a specific point angle based on the type of material to be drilled. For general purpose use, such as wood and soft metal, set the point angle to 118° (see **Figure 16**). Set the point angle at 135° or 140° for drilling harder workpieces such as stainless steel, or 90°-100° for drilling soft cast iron workpieces.

To adjust the point angle:

1. Determine the point angle of your bit.
 - If you want to grind the same angle that is already on your bit, match the bit with one shown in **Figure 16**.

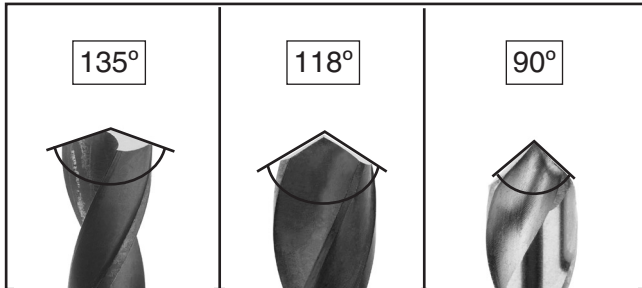


Figure 16. Point angle examples.

—If you are not certain of the bit angle or want to select a different point angle, base the angle on the material softness or hardness of your application.

2. Use the included hex wrench to loosen the cap screw on the point angle scale (**Figure 17**).

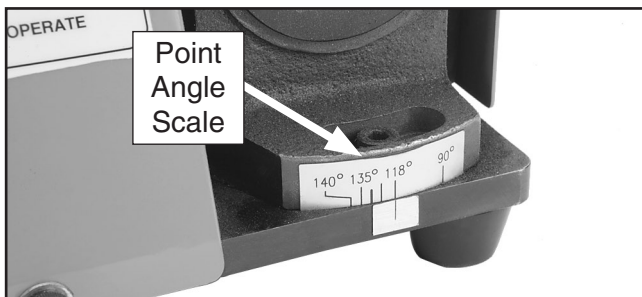


Figure 17. Point angle set to 118°.

3. Turn the scale to the desired angle and tighten the cap screw.

Front Grinding Area

The grinding wheel adjusts the drill bit point angle and taper relief angle in the front grinding area (**Figure 18**).

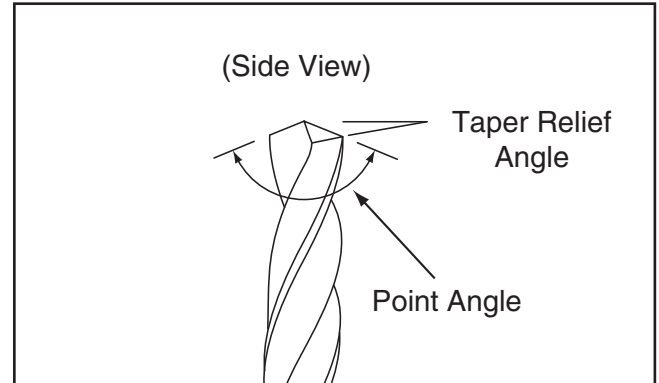


Figure 18. Drill bit point angle.

! WARNING

To reduce risk of fire or explosion from hot metal or chips, do not operate machine near flammable materials.

To grind the point angle:

1. Make sure the grinding wheel cover is secured, turn the machine **ON**, and wait for the machine to reach full speed.
2. Insert and rotate the collet holder into the front grinding area so the notch on the collet holder fits against the edge on the grinding area flange, as shown in **Figure 19**.

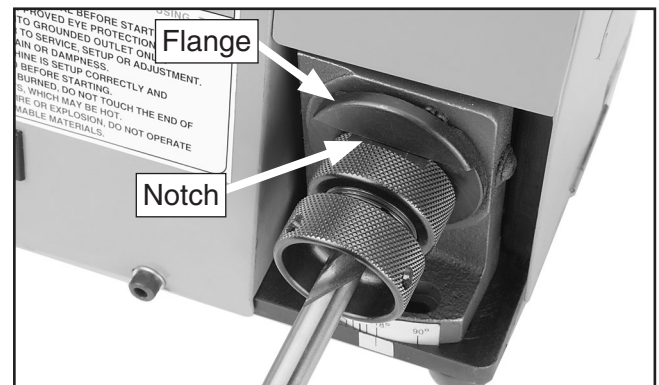


Figure 19. Collet holder notch parallel to grinding area flange.



NOTICE

You can ruin a drill bit by grinding it too long or too forcefully. Frequently dip the bit in water to cool it and retain its original hardness. If the tip becomes blue or purple, it may have overheated and be too soft to use.

3. While pressing the collet holder forward gently, rotate the drill bit back and forth, and about every four seconds, dip the bit in water to cool the tip. This will help prevent the tip from overheating and softening too much.
4. Continue grinding until the machine stops making grinding sounds.
5. Remove the collet holder and drill bit, rotate them 180°, then reinsert the collet holder and drill bit into the front grinding area.
6. Repeat **Steps 3 & 4**.
7. Examine the point angle.

—If the point angle is even on both sides of the bit, (**Figure 16**), and no unground material remains, as shown in **Figure 20**, the point angle is correct. Now, go to **Rear Trimming Area** to grind a back angle.

Note: *It is not necessary to grind a back relief on a standard bit. However, doing so will ensure the bit cuts more efficiently.*

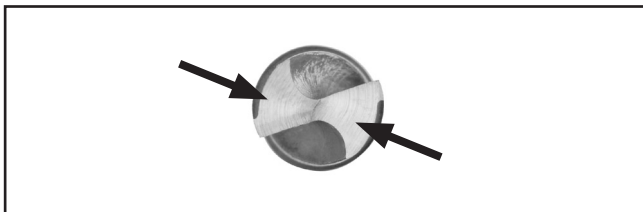


Figure 20. No unground surfaces remain on bit after point angle grinding (top view).

—If the surface of the drill bit retains unground material, try grinding the bit again, or use a different point angle setting.

—If the point angle is not shaped evenly, repeat **Steps 1-6**, using even pressure to grind both sides of the bit.

Rear Trimming Area

The grinding wheel grinds a back relief on standard and split point bits in the rear trimming area. Adding back relief to a standard bit makes it more efficient in removing material from a workpiece. Some trial and error will be needed to determine the correct amount of back relief, as shown in **Figures 21 & 22**.

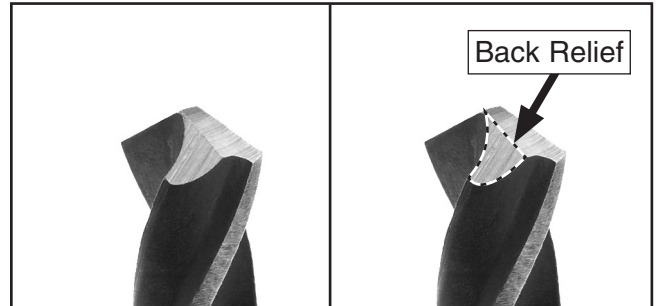


Figure 21. Correct back relief for standard bit.

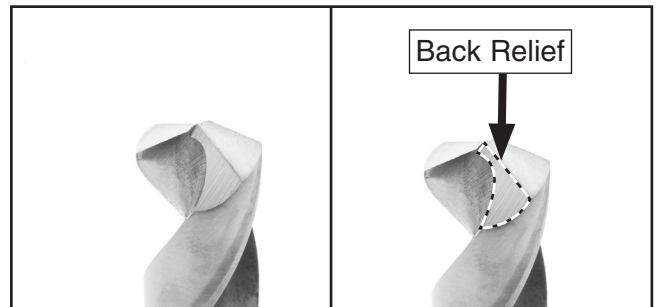


Figure 22. Correct back relief for split point bit.

To add back relief to a standard bit:

1. Loosen the cap screws (**Figure 23**) on the rear trimming area and lower the set screw to raise the adjusting block to its highest position.

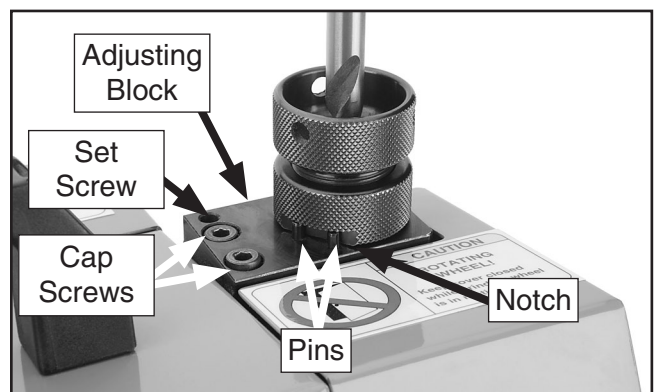


Figure 23. Collet and bit inserted into rear trimming area.



2. Tighten the cap screws, making sure the center of the rear trimming hole is over the edge of the grinding wheel, as shown in **Figure 24**.

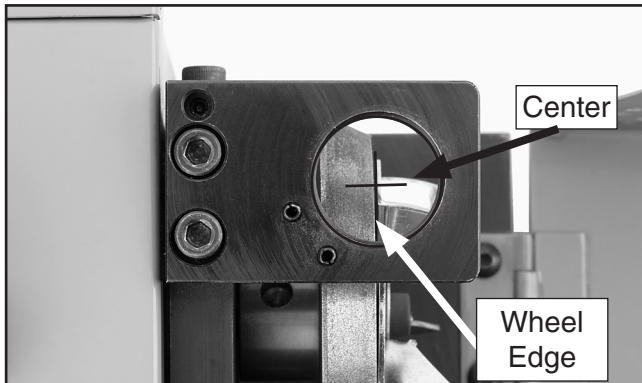


Figure 24. Rear trimming hole center over grinding wheel edge (cover removed for clarity).

3. Make sure the grinding wheel cover is secured, turn the machine **ON**, and wait for the machine to reach full speed.
4. Insert the collet holder and bit into the rear trimming area so the pins fit into the notch on the collet holder as shown in **Figure 23**.
5. Press the collet holder and bit down, and after about four seconds dip the tip in water. Continue alternating between grinding and cooling until the machine stops making grinding noises.

Note: *The harder you press down on the collet holder, the larger the back relief will be.*

6. Remove the collet holder and drill bit, rotate them 180°, reinsert them into the trimming area, and repeat **Step 5**.

!WARNING

To prevent getting burned during the next step, do not touch the end of a freshly ground bit, which may be hot.

7. Remove the collet holder and examine the bit.

—If the back relief matches the one in **Figure 21** you are finished.

—If the back relief is not sufficient (**Figure 25**), continue lowering the adjusting block until the back relief looks like the example in **Figure 21**.

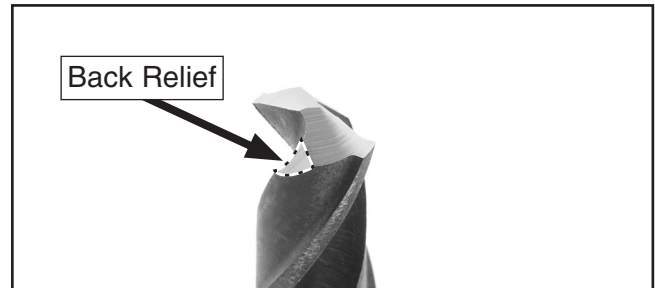


Figure 25. Back relief on standard bit too small.

8. Remove the bit from the collet holder.

To create a split point bit:

1. Follow **Steps 1-7** for creating a back relief on a standard bit.
2. Continue lowering the adjusting block, grinding the drill bit on both sides, examining it, and carefully adjusting the block down until the back relief looks like the example in **Figure 22**.

Be careful not to lower the adjusting block too far, or the point may oversplit, as shown in **Figure 26**.



Figure 26. Oversplit point.

3. Remove the bit from the collet holder.



SECTION 5: MAINTENANCE



Schedule

For optimum performance from your machine, follow this maintenance schedule and refer to any specific instructions given in this section.

Daily/Weekly Check:

- Clean chips from grinding/trimming areas and inside grinding wheel cover.
- Any other unsafe condition.

Monthly Check:

- Worn or damaged grinding wheel.
- Loose fan.

Drill Sharpening Accessories

The following accessories are available for the Model H8203:

T20238—CBN Grinding Wheel
Sharpens HSS, Tin-coated, and cobalt bits.

T20239—SDC Grinding Wheel
Sharpens carbide bits.

Call 1-800-523-4777 To Order

Cleaning

Cleaning the Model H8203 is relatively easy. Use a vacuum or brush to remove excess metal chips from around the grinding and trimming areas and inside the grinding wheel cover. Use the included cleaning brush (**Figure 27**) to clean the front grinding and rear trimming shafts. Use a cloth to remove remaining dust.



Figure 27. Cleaning rear trimming area.

Changing Grinding Wheel

A CBN 170 grinding wheel for sharpening HSS, TiN-coated, and cobalt bits is preinstalled in the H8203. Replace this grinding wheel when it no longer sharpens drill bits to your satisfaction. How often you will need to replace the grinding wheel depends upon how often you use the machine. You can also install the optional SDC 170 grinding wheel, which sharpens carbide steel bits.

Continued on next page →



To replace the grinding wheel:

1. DISCONNECT THE SHARPENER FROM POWER!
2. Use the included hex wrench to loosen the cap screw securing the grinding wheel cover at the back of the grinder, then tilt the cover away from the grinder (**Figure 28**).

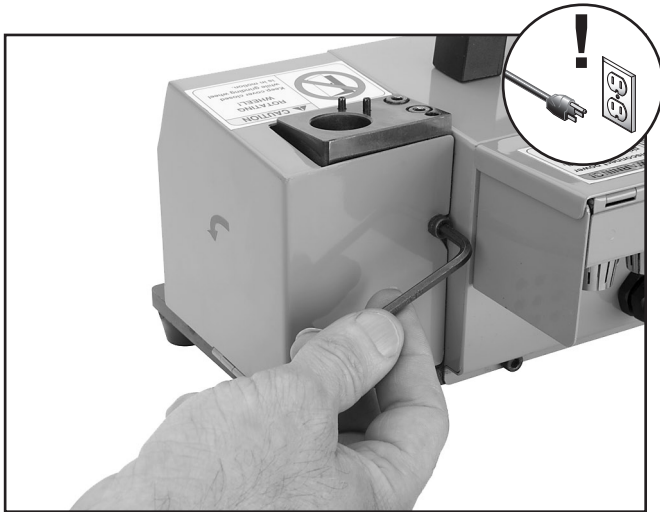


Figure 28. Removing grinding wheel cover cap screw.

2. Remove the mounting screw, flat washer and gasket, fan and grinding wheel, as shown in **Figure 28**.

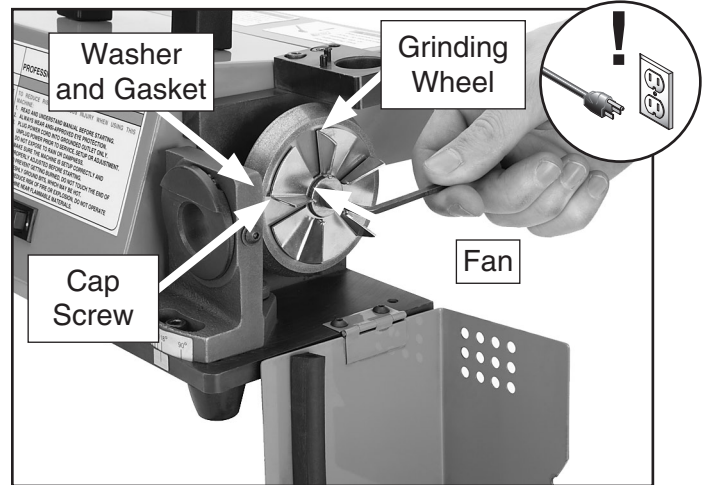


Figure 29. Removing grinding wheel.

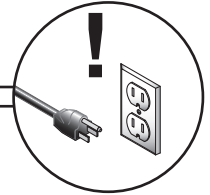
3. Insert the new grinding wheel and reinstall the components removed in **Step 2** in reverse.
4. Secure the cover with the cap screw removed in **Step 1**.



SECTION 6: SERVICE

Review the troubleshooting and procedures in this section to fix or adjust your machine if a problem develops. If you need replacement parts or you are unsure of your repair skills, then feel free to call our Technical Support at (570) 546-9663.

Troubleshooting



Motor & Electrical

Symptom	Possible Cause	Possible Solution
Machine does not start or a breaker trips.	<ol style="list-style-type: none"> 1. Plug/receptacle is at fault or wired incorrectly. 2. Wiring is open/has high resistance. 3. Motor ON button or ON/OFF switch is at fault. 4. Motor is at fault. 	<ol style="list-style-type: none"> 1. Test for good contacts; correct the wiring. 2. Check for broken wires or disconnected/corroded connections, and repair/replace as necessary. 3. Replace faulty ON button or ON/OFF switch. 4. Test/repair/replace.
Machine stalls or is overloaded.	<ol style="list-style-type: none"> 1. Plug/receptacle is at fault. 2. Motor bearings are at fault. 3. Motor is at fault. 	<ol style="list-style-type: none"> 1. Test for good contacts; correct the wiring. 2. Test by rotating shaft; rotational grinding/loose shaft requires bearing replacement. 3. Test/repair/replace.
Machine has vibration or noisy operation.	<ol style="list-style-type: none"> 1. Motor or component is loose. 2. Motor shaft is bent. 	<ol style="list-style-type: none"> 1. Inspect/replace stripped or damaged bolts/nuts, and re-tighten with thread locking fluid. 2. Test with dial indicator and replace motor.

Sharpening Operations

Symptom	Possible Cause	Possible Solution
Drill bit will not fit into collet.	<ol style="list-style-type: none"> 1. Wrong size collet. 	<ol style="list-style-type: none"> 1. Select a larger collet (Page 14).
Drill bit moves in collet.	<ol style="list-style-type: none"> 1. Collet lock ring not secured. 	<ol style="list-style-type: none"> 1. Secure lock ring (Page 15).
Drill bit moves even when collet ring is secured.	<ol style="list-style-type: none"> 1. Wrong collet size. 	<ol style="list-style-type: none"> 1. Select correct collet size for drill bit.
Drill bit not sharpened to desired point angle.	<ol style="list-style-type: none"> 1. Bit not calibrated properly in collet. 2. Point angle scale set to incorrect angle. 3. Bit sharpened unevenly or more pressure applied to one side than the other in the front grinding area. 	<ol style="list-style-type: none"> 1. Re-calibrate bit (Page 14). 2. Adjust scale to correct angle (Page 16). 3. Use even pressure to grind both sides of the bit.
Drill bit point angle or web not adjusted.	<ol style="list-style-type: none"> 1. Collet holder and bit not fully inserted into front grinding or rear trimming area. 2. Bit not set correctly in collet holder. 3. Adjusting block set too high. 	<ol style="list-style-type: none"> 1. Insert collet holder with bit correctly (Page 14) into front grinding area and rear trimming area. 2. Reset bit in collet holder. 3. Lower adjusting block.



Sharpening Operations Continued

Symptom	Possible Cause	Possible Solution
Drill bit point over-split and chisel edges have been removed.	<ol style="list-style-type: none"> 1. Adjusting block set too low. 2. Adjusting block not secured; blocks sags, allowing wheel to grind bit too much. 	<ol style="list-style-type: none"> 1. Regrind bit in front and rear areas, but do not lower adjusting block so much. 2. Secure adjusting block before grinding.
Amount of back relief ground into bit is too small.	<ol style="list-style-type: none"> 1. Adjusting block not low enough. 	<ol style="list-style-type: none"> 1. Lower adjusting block more (Page 18).
Heavy grinding noises. Drill bit smokes or tip has a black, blue, or purple hue.	<ol style="list-style-type: none"> 1. Too much pressure applied on drill bit during grinding. 2. Tip is too hot and may have been softened too much. 	<ol style="list-style-type: none"> 1. Use less pressure (Page 15) and take longer to grind the bit. 2. Try using the bit. If it dulls quickly the tip was softened.
Standard drill bit point skips or does not cut into workpiece.	<ol style="list-style-type: none"> 1. Bit has no back relief grind. 2. Heel is higher than cutting lip or is curved up. 	<ol style="list-style-type: none"> 1. Follow instructions for grinding a back relief to improve drill bit performance (Page 14). 2. Regrind the point angle until it is correct. If the heel is curved up, follow instructions for grinding a back relief.
Notch on collet holder will not fit into grinding area flange edge. Bit retains unground material or part of prior angle after grinding in front area.	<ol style="list-style-type: none"> 1. Point angle on bit may be different from angle set on front grinding area. 	<ol style="list-style-type: none"> 1. Select a point angle that matches or is closer to the existing drill bit point angle. Continue grinding the point angle (if between 118° and 135°) until the old angle is removed.
Back relief ground into opposite cutting edge.	<ol style="list-style-type: none"> 1. Adjusting block center point not directly over grinding wheel edge. 	<ol style="list-style-type: none"> 1. Set center of adjusting block over edge of grinding wheel (Page 18).
Bits smoke or burn consistently or it takes a much longer time to grind the point angle or back relief than normal.	<ol style="list-style-type: none"> 1. The grinding wheel is dull. 	<ol style="list-style-type: none"> 1. Disconnect power and replace the grinding wheel (Page 20).



Wiring Diagram

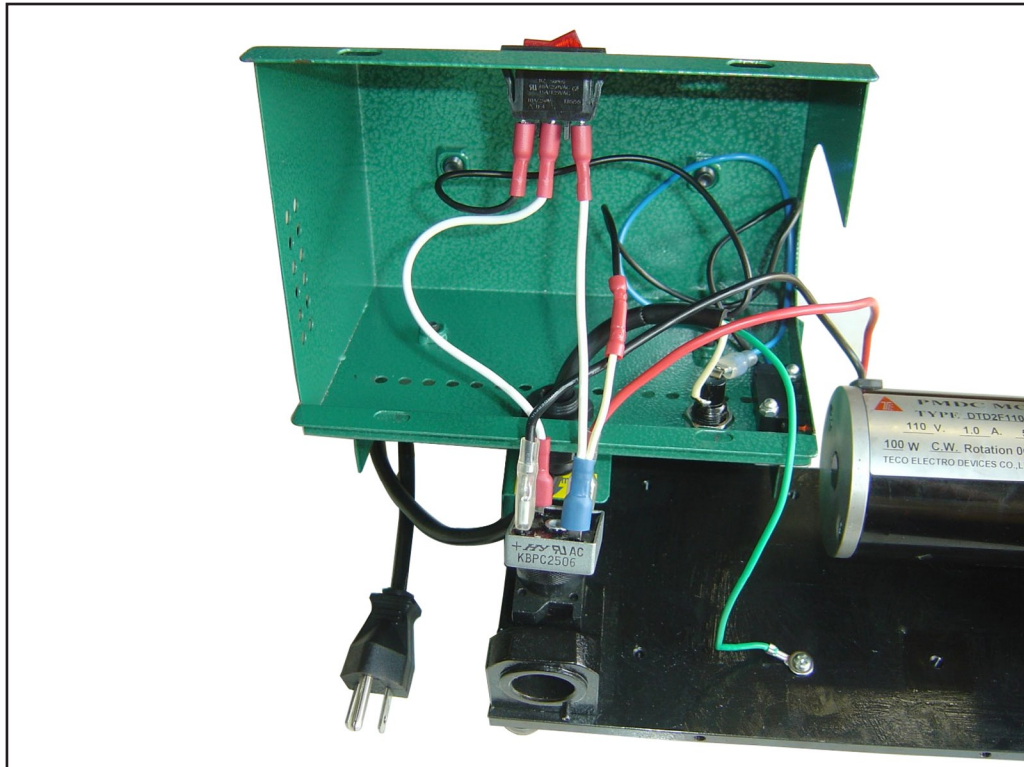


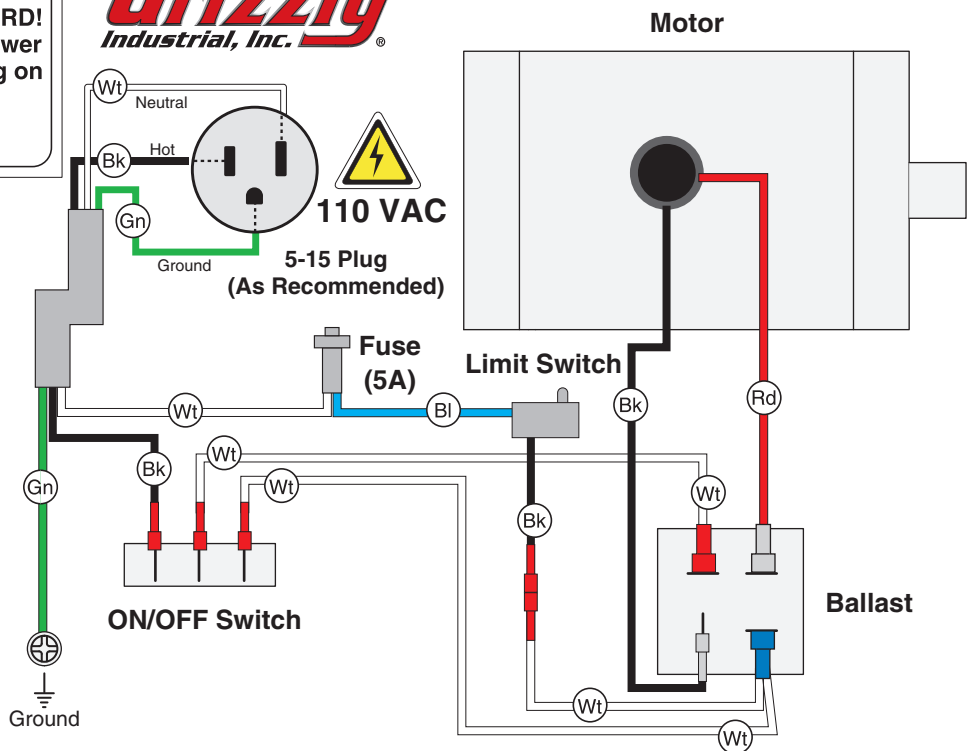
Figure 30. H8203 wiring components.



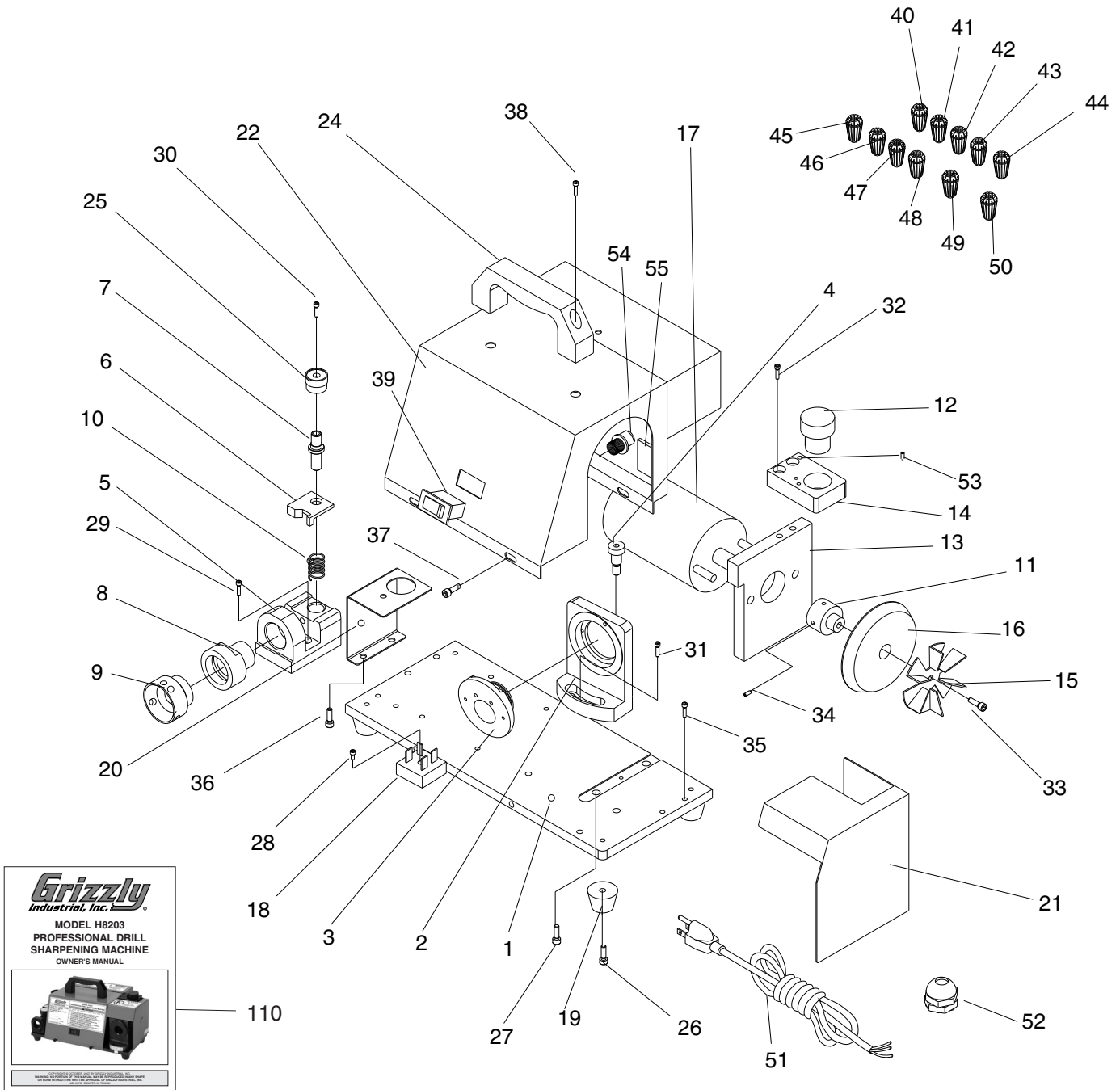
⚠ WARNING!
SHOCK HAZARD!
 Disconnect power before working on wiring.

Grizzly
 Industrial, Inc.

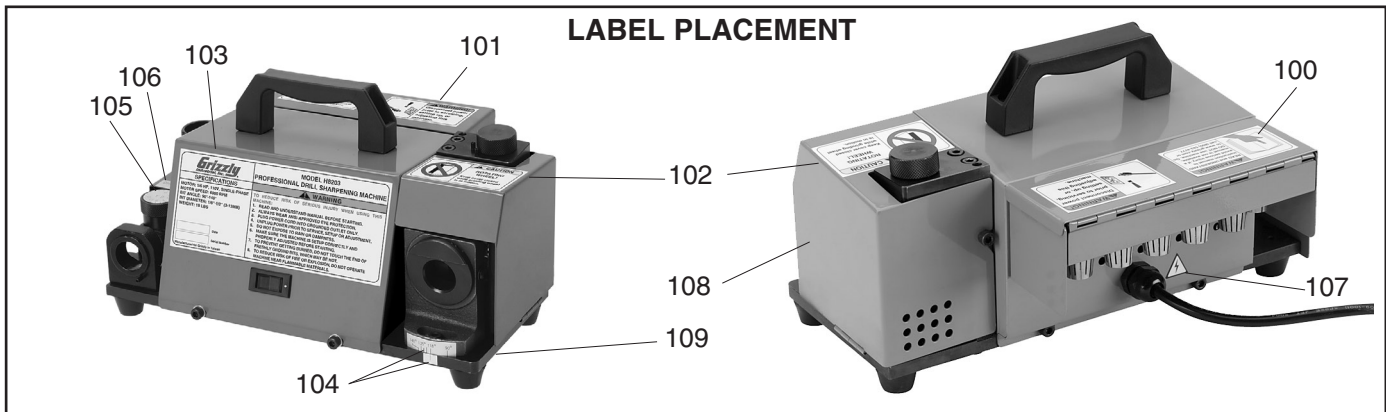
COLOR KEY	
BLACK	— (Bk) —
WHITE	— (Wt) —
GREEN	— (Gn) —
RED	— (Rd) —
BLUE	— (Bl) —



Parts Breakdown



LABEL PLACEMENT



Parts List

REF	PART #	DESCRIPTION
1	PH8203001	BASE PLATE
2	PH8203002	ANGLE BRACKET
3	PH8203003	SWIVEL SLEEVE
4	PH8203004	SPECIAL CAP SCREW
5	PH8203005	CALIBRATING DEVICE BASE
6	PH8203006	CALIBRATING PLATE
7	PH8203007	SPECIAL SET SCREW
8	PH8203008	COLLET HOLDER
9	PH8203009	LOCK RING
10	PH8203010	COMPRESSION SPRING
11	PH8203011	FLANGE
12	PH8203012	CLEANING BRUSH
13	PH8203013	MOTOR BRACKET
14	PH8203014	ADJUSTING BLOCK
15	PH8203015	FAN
16	PH8203016	GRINDING WHEEL CBN 170
17	PH8203017	MOTOR 110V, 1/6 HP
18	PH8203018	BALLAST
19	PH8203019	FOOT
20	PH8203020	CALIBRATING DEVICE COVER
21	PH8203021	GRINDING WHEEL COVER
22	PH8203022	MOTOR COVER
24	PH8203024	HANDLE
25	PH8203025	CALIBRATING DIAL
26	PSB41M	CAP SCREW M4-.7 X 14
27	PSB06M	CAP SCREW M6-1 X 25
28	PSB20M	CAP SCREW M5-.8 X 14
29	PSB41M	CAP SCREW M4-.7 X 14
30	PSB33M	CAP SCREW M5-.8 X 12
31	PSB20M	CAP SCREW M5-.8 X 14
32	PSB20M	CAP SCREW M5-.8 X 14
33	PSB50M	CAP SCREW M5-.8 X 10
34	PSS31M	SET SCREW M5-.8 X 8

REF	PART #	DESCRIPTION
35	PSBS24M	BUTTON HD CAP SCR M4-.7 X 10
36	PSB03M	CAP SCREW M5-.8 X 8
37	PSB03M	CAP SCREW M5-.8 X 8
38	PSB14M	CAP SCREW M8-1.25 X 20
39	PH8203039	SWITCH
40	PH8203040	COLLET 1/8"
41	PH8203041	COLLET 5/32"
42	PH8203042	COLLET 3/16"
43	PH8203043	COLLET 1/4"
44	PH8203044	COLLET 9/32"
45	PH8203045	COLLET 5/16"
46	PH8203046	COLLET 3/8"
47	PH8203047	COLLET 25/64"
48	PH8203048	COLLET 7/16"
49	PH8203049	COLLET 15/32"
50	PH8203050	COLLET 1/2"
51	PH8203051	POWER CORD
52	PH8203052	STRAIN RELIEF
53	PSS51M	SET SCREW M4-.7 X 8
54	PH8203054	FUSE 5A
55	PH8203055	LIMIT SWITCH
100	PH8203100	READ MANUAL LABEL 2-3/4" X 1-1/2"
101	PH8203101	DISCONNECT POWER LABEL 2-3/4" X 1-1/2"
102	PH8203102	KEEP COVER CLOSED LABEL 2-3/4" X 1-1/2"
103	PH8203103	MACHINE ID LABEL
104	PH8203104	ANGLE SCALE LABEL
105	PH8203105	CALIBRATING DIAL LABEL
106	PH8203106	DRILL DIAMETER LABEL
107	PH8203107	ELECTRICITY LABEL
108	PH8203108	GRIZZLY GREEN TOUCH UP PAINT
109	PH8203109	BLACK TOUCH UP PAINT
110	PH8203MAN	H8203 MANUAL 11/7

WARNING

Safety labels warn about machine hazards and ways to prevent injury. The owner of this machine **MUST** maintain the original location and readability of the labels on the machine. If any label is removed or becomes unreadable, **REPLACE** that label before using the machine again. Contact Grizzly at (800) 523-4777 or www.grizzly.com to order new labels.





WARRANTY CARD

Name _____

Street _____

City _____ State _____ Zip _____

Phone # _____ Email _____ Invoice # _____

Model # _____ Order # _____ Serial # _____

The following information is given on a voluntary basis. It will be used for marketing purposes to help us develop better products and services. **Of course, all information is strictly confidential.**

1. How did you learn about us?

- Advertisement
- Card Deck
- Friend
- Website
- Catalog
- Other:

2. Which of the following magazines do you subscribe to?

- | | | |
|---|--|---|
| <input type="checkbox"/> Cabinet Maker | <input type="checkbox"/> Popular Mechanics | <input type="checkbox"/> Today's Homeowner |
| <input type="checkbox"/> Family Handyman | <input type="checkbox"/> Popular Science | <input type="checkbox"/> Wood |
| <input type="checkbox"/> Hand Loader | <input type="checkbox"/> Popular Woodworking | <input type="checkbox"/> Wooden Boat |
| <input type="checkbox"/> Handy | <input type="checkbox"/> Practical Homeowner | <input type="checkbox"/> Woodshop News |
| <input type="checkbox"/> Home Shop Machinist | <input type="checkbox"/> Precision Shooter | <input type="checkbox"/> Woodsmith |
| <input type="checkbox"/> Journal of Light Cont. | <input type="checkbox"/> Projects in Metal | <input type="checkbox"/> Woodwork |
| <input type="checkbox"/> Live Steam | <input type="checkbox"/> RC Modeler | <input type="checkbox"/> Woodworker West |
| <input type="checkbox"/> Model Airplane News | <input type="checkbox"/> Rifle | <input type="checkbox"/> Woodworker's Journal |
| <input type="checkbox"/> Modeltec | <input type="checkbox"/> Shop Notes | <input type="checkbox"/> Other: |
| <input type="checkbox"/> Old House Journal | <input type="checkbox"/> Shotgun News | |

3. What is your annual household income?

- \$20,000-\$29,000
- \$30,000-\$39,000
- \$40,000-\$49,000
- \$50,000-\$59,000
- \$60,000-\$69,000
- \$70,000+

4. What is your age group?

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70+

5. How long have you been a woodworker/metalworker?

- 0-2 Years
- 2-8 Years
- 8-20 Years
- 20+ Years

6. How many of your machines or tools are Grizzly?

- 0-2
- 3-5
- 6-9
- 10+

7. Do you think your machine represents a good value? Yes No

8. Would you recommend Grizzly Industrial to a friend? Yes No

9. Would you allow us to use your name as a reference for Grizzly customers in your area?
Note: We never use names more than 3 times. Yes No

10. Comments: _____

CUT ALONG DOTTED LINE

FOLD ALONG DOTTED LINE



Place
Stamp
Here



GRIZZLY INDUSTRIAL, INC.
P.O. BOX 2069
BELLINGHAM, WA 98227-2069



FOLD ALONG DOTTED LINE

Send a Grizzly Catalog to a friend:

Name _____
Street _____
City _____ State _____ Zip _____

TAPE ALONG EDGES--PLEASE DO NOT STAPLE

WARRANTY AND RETURNS

Grizzly Industrial, Inc. warrants every product it sells for a period of **1 year** to the original purchaser from the date of purchase. This warranty does not apply to defects due directly or indirectly to misuse, abuse, negligence, accidents, repairs or alterations or lack of maintenance. This is Grizzly's sole written warranty and any and all warranties that may be implied by law, including any merchantability or fitness, for any particular purpose, are hereby limited to the duration of this written warranty. We do not warrant or represent that the merchandise complies with the provisions of any law or acts unless the manufacturer so warrants. In no event shall Grizzly's liability under this warranty exceed the purchase price paid for the product and any legal actions brought against Grizzly shall be tried in the State of Washington, County of Whatcom.

We shall in no event be liable for death, injuries to persons or property or for incidental, contingent, special, or consequential damages arising from the use of our products.

To take advantage of this warranty, contact us by mail or phone and give us all the details. We will then issue you a "Return Number," which must be clearly posted on the outside as well as the inside of the carton. We will not accept any item back without this number. Proof of purchase must accompany the merchandise.

The manufacturers reserve the right to change specifications at any time because they constantly strive to achieve better quality equipment. We make every effort to ensure that our products meet high quality and durability standards and we hope you never need to use this warranty.

Please feel free to write or call us if you have any questions about the machine or the manual.

Thank you again for your business and continued support. We hope to serve you again soon.

grizzly.com

TOOL WEBSITE

Buy Direct and Save with Grizzly® – Trusted, Proven and a Great Value!

*Visit Our Website Today And Discover
Why Grizzly® Is The Industry Leader!*

- SECURE ORDERING
- ORDERS SHIPPED WITHIN 24 HOURS
- E-MAIL RESPONSE WITHIN ONE HOUR

-OR-

Call Today For A **FREE**
Full Color Catalog

1-800-523-4777

